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| 09/734,635 | 12/12/2000 | Hidetaka Oka | A-22141/US/A/CGJ 118 | 4752 |

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EXAMINER

THORNTON, YVETTE C

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1752

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DATE MAILED: 04/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/734,635

Applicant(s)

OKA ET AL.

Examiner

Yvette C. Thornton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

This is written in reference to application number 09/734635 filed on December 12, 2000.

Request for Continued Examination (RCE)

1. The request filed on January 27, 2003 for a Request for Continued Examination (RCE) under 37 CFR 1.53(d) based on parent Application No. 09/734635 is acceptable and a RCE has been established. An action on the RCE follows.

Oath/Declaration

2. The examiner acknowledges the declaration submitted pursuant to 37 CFR 1.132 by inventor Hidetaka Oka on December 12, 2002.

Response to Amendment

3. Claims 1-18 are currently pending. The instant claims have been amended to exclude the choice of the aryl group being unsubstituted.
4. The amendment to the claims filed on December 12, 2002 does not comply with the requirements of 37 CFR 1.121(c) because it fails to contain a clean copy of the claims. Amendments to the claims filed after March 1, 2001 must comply with 37 CFR 1.121(c) which requires that, "*A rewritten or newly added claim must be in clean form, that is, without markings to indicate the changes that have been made*". Appropriate correct is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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6. Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The examiner has failed to find sufficient support for the amendment to claim 1 wherein a "C₃-C₉ heteroaryl is substituted by phenoxy carbonyl, OR₃, SR₄, SOR₄, SO₂R₄ or NR₅R₆", as set forth in lines 25-26 of the said claim. Clarification is requested.

7. The examiner hereby withdraws the rejection of the claims under 35 USC 112, 2nd paragraph in light of the amendment to the claims and the arguments presented in paper number 16. The examiner has interpreted claim 1 to present one large Markush group wherein Ar₁ is a C₆-C₂₀ aryl, C₆-C₂₀ aryloyl or a C₃-C₉ heteroaryl, which can be unsubstituted or substituted with any of the listed compounds.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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9. Claims 1, 6-7 and 17 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6, 11-12 and 17 of copending Application No. 09/734625 (US 2001/0012596). Although the conflicting claims are not identical, they are not patentably distinct from each other because one of ordinary skill in the art would have been motivated to develop a photopolymerizable composition comprising (a) at least one ethylenically unsaturated photopolymerizable compound, (b) as a photoinitiator at least one compound of formula (I) or (II) and a binder polymer (cl. 11) as taught by the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-10 and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laridon et al. (US 4282309A). Laridon teaches a photosensitive composition suited for the production of polymer resist images comprising a mixture of (1) a photopolymerizable ethylenically unsaturated compound, (2) at least one oxime ester photopolymerization initiator, and (3) at least one sensitizer (abstract). Specific oxime esters are represented by

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the formulae:
$$\begin{array}{c} \text{R}^4 \\ | \\ \text{R}^5 - \text{C} = \text{N} - \text{O} - \text{R}^6 \end{array}$$
 wherein R_4 represents a C_{1-2} alkyl group, an aryl group, an alkaryl group, an aralkyl group, a hydroxy-substituted aralkyl group or a substituted or unsubstituted acyl group. R_5 is a hydrogen atom, a C_{1-2} alkyl group, an aryl group, or a substituted or unsubstituted acyl group. R_6 represents a substituted or unsubstituted acyl group (c. 2, l. 44-68). It is the examiner's position that when R_5 is hydrogen and R_4 is alkaryl, the limitations of claimed formula (I) are met wherein Ar1 is a C_{6-20} aryl substituted with a C_{1-20} alkyl group. The photosensitive recording composition of the taught invention can be coated in the form of a layer on a support (c. 6, l. 3-5). It may comprise one or more ethylenically unsaturated polymerizable compounds such as styrene, acrylamide, acrylonitrile and methyl methacrylate (c. 6, l. 5-11). The photosensitive layer preferably comprises plurally unsaturated photopolymerizable compounds such as divinylbenzene, diglycol diacrylates, and pentaerythritol triacrylate (c. 6, l. 29-40). The said photopolymerizable compound can be used together with a polymeric binding agent. Suitable binding agents are polystyrene, polyvinyl acetate, copolymers of acrylic acid, methacrylic acid and unsaturated dicarboxylic acids such as maleic acid. Especially suitable are the alkali soluble copolymers of methyl methacrylate and methacrylic acid (c. 7, l. 1-46),

Laridon teaches many uses of the taught invention. If the support is made of a transparent resin or glass, photosensitive layers containing dyes or pigments can be used to make transparencies. If the support is made of an opaque paper, and the photosensitive layer contains dyes or pigments, opaque color proofs can be made by washing off. If the support is made of metal a photoresist can be prepared with a photosensitive coating according to the

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taught invention wherein the resist can be used as an etch resist (c. 8, l. 28-38). For the production of planographic printing plates, intaglio and relief images, and printed circuits, the substrates maybe stone, paper, and metal based materials suitable for etching (c. 8, l. 39-58). In the production of miniaturized integrated electrical components, the photosensitive composition serves as a shielding pattern on a semiconductor substrate wherein the desired electronic properties are added by techniques such as ion implantation, electrode-less deposition, ion milling or etching (c. 8, l. 59-66). One of ordinary skill in the art would have been motivated by these teachings to coat the taught composition in combination with pigment or dye onto a transparent substrate comprising an electrode in order to obtain a desired electronic component (i.e., a color filter).

The photosensitive recording material is prepared by coating the taught photosensitive layer on a selected substrate by known coating techniques. The coating composition may comprise besides the taught ingredients, matting agents, antistatic agents, coating aid. Examples include silica particles, which meet the limitation of inorganic filler as set forth in instant claim 10. Before their application in the form of a coating these ingredients are dissolved in a low boiling solvent, which is removed by evaporation after coating (c. 9, l. 45-60). The photosensitive coating is exposed to actinic radiation whereby the exposed areas are polymerized and the unexposed portions are removed by washing with a solvent (c. 10, l. 43-68). Any source of actinic radiation can be used in the range of 200-400 nm (c.11, l. 3-15). See also claims 1, 3 and 5-9.

One of ordinary skill in the art would have been motivated by the teachings of Laridon to make a photosensitive composition comprising (1) a photopolymerizable

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ethylenically unsaturated compound; (2) at least one oxime ester photopolymerization

initiator represented by the formulae:
$$\text{R}^5-\overset{\text{R}^4}{\underset{|}{\text{C}}}=\text{N}-\text{O}-\text{R}^6$$
 wherein R_5 is hydrogen and R_4 is alkaryl; and (3) at least one sensitizer (abstract) in order to make a photosensitive coating which can be used in a large variety of applications.

Allowable Subject Matter

12. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: review of the prior art failed to teach and/or disclose a photosensitive composition as set forth in the present claims further comprising an epoxy compound which contains at least two epoxy group in the molecule.

Response to Arguments

14. Applicant's arguments filed in regard to the instant claims have been fully considered but they are not persuasive. Applicants argue that the prior art reference of Laridon (US '309.) fails to exemplify the claimed aldoxime compound and only used ketoxime compounds. Applicants acknowledge that Laridon generically encompasses aldoxime compounds but does not actually exemplify such compounds. Laridon clearly teaches that R_5 is a hydrogen atom, a C_{1-2} alkyl group, an aryl group, or a substituted or unsubstituted acyl group. R_4 is selected from a C_{1-2} alkyl group, an aryl group, an alkaryl group, an aralkyl group, a hydroxy-substituted aralkyl group or a substituted or unsubstituted acyl group. Although a

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compound having R5 as hydrogen and R4 as alkaryl group is not exemplified, one of ordinary skill in the art can readily envision the use of hydrogen and alkaryl as a suitable substituents.

Thereby rendering the claimed invention obvious over the cited prior art.

15. Applicants further assert that they have surprisingly discovered that the claimed aldoxime compounds has enhanced results. The declaration submitted on December 12, 2002 has been considered but is not convincing. The said declaration uses preferred substituents for Ar₁, which may give enhanced results. Furthermore, it is unclear to the examiner why the applicant selected the two substituents used in the declaration and not something more closely related to the taught compound such as an aryl substituted with a C2-12alkoxycarbonyl group. Additionally, the declaration fails to compare the closest prior art. The declaration uses the composition of example 31 of the present specification and the examiner is unable to make a direct comparison between the taught prior art and the claimed invention. A better comparison would have been to make the composition of example 1 of Laridon and vary the ketoxime component.

16. The examiner maintains the prior art reference of Laridon is applicable as stated above.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Usifer et al. (US 5104770A) which teaches a positive working photoresist composition.
- Kitaguchi et al. (US 4670373 A) which teaches the synthesis of an acid precursor.

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- Hirai et al. (US 4499180 A) which teaches heat developable color photographic materials with base precursor.


18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvette C. Thornton whose telephone number is 703-305-0589. The examiner can normally be reached on Monday-Thursday 8-6:30.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet C. Baxter can be reached on 703-308-2303. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

20. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1495.

21. Please note that the examiner has recently changed her name from "Clarke" to "Thornton".

yct 
April 1, 2003


JANET BAXTER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700